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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,391	10/07/2004	Jonathon Leigh Napper	NPW012NPUS	6473
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EXAMINER CHIONACKI, MELLISSA M				
ART UNIT 2164		PAPER NUMBER		
NOTIFICATION DATE 08/20/2009		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/510,391

Applicant(s)

NAPPER ET AL.

Examiner

MELLISSA M. CHOJNACKI

Art Unit

2164

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Remarks

1. In response to communications filed on June 4, 2009, no claims are cancelled; claims 1, and 17 have been amended, and no new claims have been added. Therefore, claims 1-23 are still presently pending in the application.

35 USC § 101

2. As per claims 1-23, these claims appear, based on the applicants arguments in the amendment filed on June 4, 2009, to conform to 35 USC 101 requirements. However, to be clear the examiner is examining the "processing system" and "systems" discloses in independent claims 1 and 17, as being performed by computer hardware or communication system, excluding "electromagnetic signals, for example radio-frequency signals or infra-red signals" as disclosed in the specification. These claims appear to be directed to an appropriate **process** within the meaning of 35 USC 101.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lopresti et al. (U.S. Patent No. 5,832,474), in view of Hull et al. (U.S. Patent No. 6,018,591).

As to claim 1, Lopresti et al. teaches a method of improving accuracy in searching digital ink stored in a database accessible by a processing system (See abstract; column 2, lines 60-67; column 3, lines 1-28), the method comprising:

receiving, as input digital ink in the processing system the search input query having a specialized format (See column 2, lines 43-59; column 3, lines 16-33);

determining, in the processing system, the specialized format of input digital ink (See column 3, lines 16-28, where "patterns" is read on "format");

searching the database for a match to the search input query by utilising the processed input digital ink and selected digital ink searching algorithm (See column 2, lines 60-67; column 3, lines 1-2, lines 16-28; column 13, lines 11-18); and

returning any matches to the search input query as a search result (See column 3, lines 16-28).

Lopresti et al. does not explicitly teach selecting, in the processing system and from a plurality of different digital ink searching algorithms which are each specialized to respectively different specialized formats of digital ink, a digital ink searching algorithm which is specialized to the determined specialized format of the input digital ink; processing, in the processing system, the input digital ink in accordance with the selected digital ink searching algorithm, the processing including segmenting the input

digital ink into feature vectors, the segmenting being specific to the specialized format of the input digital ink.

Hull et al. teaches Scribble Matching (See abstract), in which he teaches selecting, in the processing system and from a plurality of different digital ink searching algorithms which are each specialized to respectively different specialized formats of digital ink, a digital ink searching algorithm which is specialized to the determined specialized format of the input digital ink (See abstract; column 1, lines 51-67; column 2, lines 1-5; column 4, lines 25-57); processing, in the processing system, the input digital ink in accordance with the selected digital ink searching algorithm, the processing including segmenting the input digital ink into feature vectors, the segmenting being specific to the specialized format of the input digital ink (See abstract; column 1, lines 51-67; column 2, lines 1-5; column 4, lines 25-57).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention was made to have modified Lopresti et al., to include selecting, in the processing system and from a plurality of different digital ink searching algorithms which are each specialized to respectively different specialized formats of digital ink, a digital ink searching algorithm which is specialized to the determined specialized format of the input digital ink; processing, in the processing system, the input digital ink in accordance with the selected digital ink searching algorithm, the processing including segmenting the input digital ink into feature vectors, the segmenting being specific to the specialized format of the input digital ink.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lopresti et al., by the teachings of Hull et al. because selecting, in the processing system and from a plurality of different digital ink searching algorithms which are each specialized to respectively different specialized formats of digital ink, a digital ink searching algorithm which is specialized to the determined specialized format of the input digital ink; processing, in the processing system, the input digital ink in accordance with the selected digital ink searching algorithm, the processing including segmenting the input digital ink into feature vectors, the segmenting being specific to the specialized format of the input digital ink would circumvents the problems of full handwriting recognition by matching scribbles according to topological and/or temporal features and achieves relatively high matching rates (See Hull et al., column 2, lines 18-21).

As to claim 2, Lopresti et al. as modified, teaches wherein the specialized format of digital ink is determined automatically, based on the digital ink to be searched (See Lopresti et al., column 3, lines 16-28).

As to claim 3, Lopresti et al. as modified, teaches wherein the specialized format of digital ink is determined automatically, based on the search input query (See Lopresti et al., column 3, lines 16-28).

As to claim 4, Lopresti et al. as modified, teaches wherein the specialized format of digital ink is determined automatically, based on information contained in a document associated with the digital ink to be searched (See Lopresti et al., column 3, lines 16-28).

As to claim 5, Lopresti et al. as modified, teaches wherein the specialized format of digital ink is determined manually, by a user selecting the specialized format of digital ink (See Lopresti et al., column 3, lines 16-28).

As to claim 6, Lopresti et al. as modified, teaches wherein the specialized format of digital ink is determined manually, by a parameter associated with the system processing the digital ink (See Lopresti et al., column 3, lines 16-28, where "spatial and temporal components" is read on "parameter").

As to claim 7, Lopresti et al. as modified, teaches wherein the specialized format of digital ink is determined automatically, based on a font contained in the document associated with the digital ink to be searched (See Lopresti et al., column 3, lines 16-28; column 8, lines 13-61).

As to claim 8, Lopresti et al. as modified, teaches wherein the specialized format of digital ink is determined based on a document label or document setting associated

with the digital ink (See Lopresti et al., column 8, lines 13-61; column 11, lines 61-67).

As to claim 9, Lopresti et al. as modified, teaches wherein the specialized format of digital ink is determined based on a document field label associated with the digital ink (See Lopresti et al., column 8, lines 13-61; column 11, lines 61-67).

As to claim 10, Lopresti et al. as modified, teaches wherein the specialized format of digital ink is determined based on a document field attribute associated with the digital ink (See Lopresti et al., column 8, lines 13-61; column 11, lines 61-67).

As to claim 11, Lopresti et al. as modified, teaches wherein the specialized format of digital ink is determined based on an analysis of the characteristics of the digital ink to be searched (See Lopresti et al., column 8, lines 13-61; column 11, lines 61-67).

As to claim 12, Lopresti et al. as modified, teaches wherein the specialized format of digital ink is determined based on a written language or script of the digital ink to be searched (See Lopresti et al., column 8, lines 13-61; column 11, lines 61-67).

As to claim 13, Lopresti et al. as modified, teaches wherein the specialized format of digital ink is determined based on a written character set of the digital ink to be

searched (See Lopresti et al., column 8, lines 13-61; column 11, lines 61-67).

As to claim 14, Lopresti et al. as modified, teaches wherein the specialized format of digital ink is determined based on differentiating written text from drawings in the digital ink to be searched (See Lopresti et al., column 8, lines 13-61; column 11, lines 61-67).

As to claim 15, Lopresti et al. as modified, teaches wherein the search input query is of a type from the group of: textual; numerical; alphanumeric; pictorial; or graphical (See Lopresti et al., column 3, lines 16-28; column 8, lines 13-61; column 11, lines 61-67).

As to claim 16, Lopresti et al. as modified, teaches wherein an indicating label of the specialized format of digital ink is stored with the digital ink (See Lopresti et al., column 3, lines 16-28; column 8, lines 13-61; column 11, lines 61-67).

As to claim 17, Lopresti et al. teaches a system for improving accuracy in searching digital ink (See abstract), the system comprising:

- (1) an input device to receive a search input query as digital ink having a specialized format, the specialized format having a unique text structure (See column 3, lines 16-33);
- (2) a storage device to store the searchable digital ink (See column 4, lines 4-15);

(3) at least one processor in communication with the storage device (See column 4, lines 4-30), the at least one processor being loaded with a plurality of different digital ink searching algorithms which are each specialized to respectively different specialized formats of digital ink (See column 2, lines 60-67; column 3, lines 1-28), the processor being configured to:

(A) determine the unique text structure of the specialized format of digital ink (See column 3, lines 16-28, where "patterns" is read on "format");

(B) select a digital ink searching algorithm which is specialized to the determined specialized format of the input digital ink (See column 2, lines 60-67; column 3, lines 1-2, lines 16-28; column 13, lines 11-18); and,

(D) search the digital ink for matches to the search input query by utilising the selected digital ink searching algorithm (See column 2, lines 60-67; column 3, lines 1-2, lines 16-28; column 13, lines 11-18); and,

(4) an output device to display one or more search results (See column 7, lines 1-6).

Lopresti et al. does not explicitly teach process the input digital ink in accordance with the selected digital ink searching algorithm, the processing including segmenting the input digital ink into feature vectors, the segmenting being specific to the specialized format of the input digital ink.

Hull et al. teaches Scribble Matching (See abstract), in which he teaches process the input digital ink in accordance with the selected digital ink searching algorithm, the processing including segmenting the input digital ink into feature vectors, the

segmenting being specific to the specialized format of the input digital ink (See abstract; column 1, lines 51-67; column 2, lines 1-5; column 4, lines 25-57).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention was made to have modified Lopresti et al., to include process the input digital ink in accordance with the selected digital ink searching algorithm, the processing including segmenting the input digital ink into feature vectors, the segmenting being specific to the specialized format of the input digital ink.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lopresti et al., by the teachings of Hull et al. because process the input digital ink in accordance with the selected digital ink searching algorithm, the processing including segmenting the input digital ink into feature vectors, the segmenting being specific to the specialized format of the input digital ink would circumvents the problems of full handwriting recognition by matching scribbles according to topological and/or temporal features and achieves relatively high matching rates (See Hull et al., column 2, lines 18-21).

As to claim 18, Lopresti et al. as modified, teaches wherein the input device is a pen-based input device (See Lopresti et al., abstract; column 1, lines 12-16).

As to claim 19, Lopresti et al. as modified, teaches wherein the input device is a keyboard or keypad (See Lopresti et al., column 1, lines 44-45).

As to claim 20, Lopresti et al. as modified, teaches wherein the output device is a printer or a visual display (See Lopresti et al., column 7, lines 1-6).

As to claim 21, Lopresti et al. as modified, teaches wherein the digital ink is associated with one or more of a document label, a document setting, a document field label or a document field attribute, and the specialized format of digital ink is determined from one or more of the document label, the document setting, the document field label or the document field attribute (See Lopresti et al., column 3, lines 16-28; column 8, lines 13-61; column 11, lines 61-67).

As to claim 22, Lopresti et al. as modified, teaches wherein the at least one processor determines the specialized format of digital ink based on user input to the input device (See Lopresti et al., column 3, lines 16-28; column 8, lines 13-61; column 11, lines 61-67).

As to claim 23, Lopresti et al. as modified, teaches the system as claimed in claim 17, the at least one processor adapted to perform the method of any one of the claims 1 to 16 (See Lopresti et al., column 4, lines 16-30).

Response to Arguments

5. Applicant's arguments filed on June 4, 2009, with respect to the rejected claims in view of the cited references have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to Accuracy in Searching Digital Ink in general:

"Scribbler: A Tool for Searching Digital Ink"; Alex Poon, Karon Weber, and Todd Cass; http://www.sigchi.org/chi95/proceedings/shortppr/adp_bdy.htm; Xerox Palo Alto Research Center; 1995.

"On the Searchability of Electronic Ink"; Daniel Lopresti, Andrew Tomkins <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.44.4822>; Matsushita Information Technology Laboratory; January 9, 1997

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELLISSA M. CHOJNACKI whose telephone number is (571)272-4076. The examiner can normally be reached on 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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August 10, 2009

/Charles Rones/
Supervisory Patent Examiner, Art Unit 2164